53. A New Trematode of the Genus *Lechriorchis* from the Dark Green Snake (*Zamenis gemonensis*). By Marie V. Lebour, M.Sc., Assistant Lecturer and Demonstrator in Zoology, Leeds University *.

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(Plate XCIII.†)

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On June 10th, 1913, a specimen of a Dark Green Snake (*Zamenis gemonensis*), from Southern Europe, died in the Zoological Society's Gardens, and loose in the body-cavity were a large number of Trematodes which were sent to me for identification. These prove to be a new species of *Lechriorchis* Stafford closely related to *L. validus* Nicoll (1911). The habitat is interesting as all the Trematodes of the group which includes *Lechriorchis* whose habitat is known, occur in the air-passages, pharynx, or anterior part of the œsophagus of their hosts. This appears to be the first time that one of this group has been found occupying the body-cavity.

An interesting feature in the new species is the absence of spines on the body. The cuticle is quite smooth, unlike any of the other members of the genus. However, in some specimens spines can be seen below the surface of the cuticle, but not reaching to the outside, which seems to indicate a gradual disappearance of spines owing to the worm living in the body-cavity of its host, and therefore being in no danger of getting swept away as is the case in open passages. In all other ways it agrees closely with the other members of the genus.

On account of the absence of spines I propose for this new species the name *Lechriorchis inermis*.

Lechriorchis inermis, sp. n. (Pl. XCIII.)

Length of body 5–10 mm. Oral sucker 0·40–0·60 mm. Ventral sucker 0·60–0·92 mm. Average ratio of oral to ventral sucker 2 : 3. Prepharynx small, œsophagus the same length as pharynx. Intestinal cæca reaching a good way beyond testes.

* Communicated by the Secretary.

† For explanation of the Plate see p. 936.

Testes behind centre of body, right in front of left. Cirrus-sac reaching to posterior margin of ventral sucker. Ovary on right side behind or slightly overlapping ventral sucker. Yolk-glands reaching from just in front of the level of the anterior margin of ventral sucker to centre of testes or behind them. Receptaculum seminis uterinum present on right side of body behind right testis.

The body (fig. 1) is convex dorsally and nearly flat ventrally, both suckers being conspicuous and the cirrus usually protruding from the genital pore. The length of mature worms varies from 5 to 10 mm., the last-named being in the case of a specially well extended specimen examined under pressure. Unfortunately, this large specimen was damaged before being fixed. One immature specimen occurred measuring 4·4 mm. in length which contained a few eggs and had a very short uterus. In breadth the worms measured from 1·2 mm. to 1·9 mm., the greatest breadth being in the region of the ventral sucker. The average length is about 5·5 mm., breadth 1·4 mm.

A good deal of interesting variation occurred in the arrangement of the organs. The suckers vary but little, the ratio of the oral and ventral suckers being almost exactly 2 : 3. Both are circular in outline with circular apertures. The aperture of the oral sucker measures about 0·20 mm. across; the aperture of the ventral sucker is more than half the width of the sucker and very regular and conspicuous. The usual position of the ventral sucker is with its centre almost exactly at the anterior third of the body. It may, however, be a little further back. In the young specimen it is much nearer the centre of the body, a fact to be expected as the hind portion of the body always increases to a much greater extent than the fore part.

The prepharynx is exceedingly short but quite distinct; the pharynx is broad and muscular, the breadth slightly greater than the length (length 0·20 mm.); the œsophagus is about the same length as the pharynx. Surrounding the pharynx are large glandular cells which are continued for a short distance down the œsophagus. Pharyngeal glands are mentioned by Stafford in *L. primus* (1905). The intestinal cæca vary in thickness in different parts and reach usually about 0·60 mm. beyond the testes; beginning near the centre of the body, they gradually become more lateral and slightly ventral in position until they reach the testes, when they become quite irregular and may be both dorsal to the testes or one ventral and one dorsal (fig. 3); and one may be longer than the other, in one case quite twice as much extending beyond the left testis as the right. The usual length beyond the testes is 0·60 mm. Sometimes the cæca bend inwards so as to be completely internal to the testes. The ends are swollen and very much broader in the posterior than in the anterior part.

The excretory vesicle is large and opens at the extreme posterior

end, where it is surrounded by large deeply staining cells; just in front of the opening the vesicle is much folded, giving it the appearance of having been "puckered in" before the narrow opening. In front of this pleating it widens out as a large tube running dorsal to and parallel with the ascending limb of the uterus; in front of the testes and behind the ovary it forks, each limb reaching far forward beyond the ventral sucker to about midway between the ventral sucker and pharynx.

The testes are oval bodies more or less lobed on their inner margins, usually lying obliquely with the right testis in front of the left; the usual situation is for the right to be about 0·15 mm. in front of the left, but they may be almost on a level, and in two cases the left testis was in front of the right. Curiously enough, these variations occurred in the small immature worm and in the largest specimen. It is just possible that we may have to do here with a different species. In a specimen 5·2 mm. in length the testes measured, right 0·90 mm. × 0·44 mm., left 0·84 mm. × 0·44 mm., the greater axis lying longitudinally. On the inner margin there are two or three lobes. The cirrus-sac is long and reaches almost to the posterior level of the ventral sucker. Sometimes it reaches the extreme posterior end, and in two cases (again the immature worm and the largest) it was much shorter and only reached a short way behind the anterior margin of the ventral sucker; in this respect being much nearer *L. validus* Nicoll. The vesicula seminalis is much convoluted and occupies the posterior third of the cirrus-sac, the ductus ejaculatorius being surrounded by an enormous mass of prostatic cells and ending in a short protrusible cirrus often to be seen exserted from the genital pore. The male opening is on the right side of the genital pore, which is situated on a level with the centre of the pharynx and midway between it and the lateral margin of the body-wall. The ovary is almost round, and lies dorsally on the right side of the body immediately in front of the right testis. It overlaps the ventral sucker for about a third of its diameter; its position varies however, and in some cases it may be rather more than this and in others not so much. The portion of the ovary that overlaps the cirrus-pouch is on its right side. The oviduct receives a large shell-gland, gives off a Laurer's canal, and receives the vitellarian duct, then runs down as the uterus in many coils to nearly the posterior end of the body, when it doubles back as a much broader tube, runs forward gradually straightening and narrowing and passes the ventral sucker dorsally. In the course of the descending portion behind the right testis is a receptaculum seminis uterinum. When the uterus reaches the level of the anterior ends of the excretory vesicle its walls form a vagina with a thick cuticular lining, and surrounded by a layer of deeply staining large cells which accompany it for the whole of its course until it opens on the left side of the genital pore. The eggs are very numerous and of a deep brown colour when old, the young eggs being much paler.

The cap is not very conspicuous until the egg is open. The eggs (fig. 2) measure ·033 mm.–·036 mm. × ·021 mm.—·023 mm. The vitellaria are variable in length, but never reach beyond an extremely short distance in front of the ventral sucker, 0·02 mm. is quite the furthest they ever reach and usually it is not so much. Posteriorly they reach to about the middle of the testes, but are extremely variable in this region, and the left may reach to behind the left testes and the right hardly reach to the anterior portion of the right, or both may reach to the level of the middle of the testes. The vitellarian follicles are in small groups lying laterally to the outside of the intestinal cæca; small ducts from them unite in a transverse duct each side lying just behind the ovary, and these unite in a small reservoir in the centre of the body which gives off the vitellarian duct to the oviduct.

Lechriorchis validus Nicoll is undoubtedly the most nearly related to the present species. *L. inermis* differs from it chiefly in its much smaller eggs and position of the vitellaria. The position of the testes (right in front of left instead of the reverse) and of the vesicula seminalis being rather more variable, do not seem to be such important specific characters.

References.

Nicoll, W. (1911).—On Three New Trematodes from Reptiles. Proceedings of the Zoological Society of London, pp. 677–681.

Stafford, J. (1905).—Trematodes from Canadian Vertebrates. Zoologischer Anzeiger, xxviii. p. 691.

EXPLANATION OF PLATE XCIII.

Lechriorchis inermis, sp. n.

The following letters apply to all the figures.

C.S. Cirrus-sac.
E.P. Excretory pore.
E.V. Excretory vesicle.
G.P. Genital pore.
I. Intestine.
O. Ovary.
ŒS. Œsophagus.
O.S. Oral sucker.
PH. Pharynx.
P.PH. Prepharynx.
R.S.U. Receptaculum seminis uterinum.
S.GL. Shell-gland.
T. Testis.
U. Uterus.
V. Vitellaria.
VG. Vagina.
V.S. Ventral sucker.
V.SEM. Vesicula seminalis.

Fig. 1. Ventral view. Length 5·4 mm.
2. Eggs, length ·033 mm.
3. Transverse section through unpaired portion of excretory vesicle and testes, showing intestinal cæca irregularly placed.
4. Transverse section through ventral sucker.